

**E.A.R.T. AND FRISIAN FLAG COMBINE FORCES !
SPIN IN THE WEB: BOOMER !**

FRISIAN FLAG FIRST

For many years Leeuwarden AFB has been the scene of one of the largest fighter-jet exercises in Europe. 323 TACTES Squadron organizes this exercise for years and thus ensures their Tactical Training Evaluation and Standardization, both nationally and internationally. Frisian Flag 2014 (FF14) became an absolute good name in standardization in the operation of the F-16. Many countries have already participated in Frisian Flag, as they do so in this edition, which runned from March 31 to April 11, 2014. A respectable number of European countries chose to leave behind other exercises and travel to the north of The Netherlands which country is the organizing country. Flying participants besides the Dutch Air Force are in this exercise Portugal, Danmark, Norway, Finland, Germany, Spain and Belgium in arbitrary order. During the exercise so-called Forward Air Controllers (FAC's) of the Army and Navy are also active in the scene. Frisian Flag in terms of scenario and including exercises is nothing less than the 'Big Boy's' like Red Flag and Green Flag, but the logistics, cost and transportation aspects are much more favorable to the participating countries. Even the weather scenario is more realistic because after all, in America the sun always shines and the skies are clear and blue. In total 65 airplane participated which needed a well oiled organization. The exercise is so popular and useful, that 'Leeuwarden' had to refuse participants to keep the exercise clear and manageable this year.

MULTI-NATIONAL COOPERATION

This edition of Frisian Flag is focussed on international cooperation in several areas. This means not only in the air but also on the ground. Combat Leadership in The Netherlands and Germany, Special Forces as Forward Air Controllers act on the ground in the identification of goals, and logistics. The missions range from Defensive to Offensive ones, based on Real World Operations as former Yugoslavia, Afghanistan, Libya and the QRA tasks (Quick Reaction Alert). Frisian Flag also has a scoop: The Vigilance ISR DA-42 MPP who serves as DRONE. Since there are no real drones yet to practice, this twin-engined small aeroplane is used, brimming equipped with antenna's and sensors. The Vigilante is provided by a Dutch civil company stationed at Eindhoven AB, but flying from a base in Germany during the exercise. Leeuwarden AB and Volkel AB are the main suppliers of the F-16's, they participate with 12 in all waves (15 in total) second best are the Eurofighters with six or eight a wave. Germany counts 10 Eurofighters, Spain seven. Norway brings in eight F-16's, Belgium five, Portugal five, Denmark three, Finland six F-18 Hornets and Spain with six Eurofighters.

A self-respecting exercise can't do without COBHAM aviation and it's electronic warfare brought by the Falcon-20. These planes for instance can act and simulate they are 'other types of planes' as they really are. A 'tool' that was also used in the Scottish exercise 'Joint Warrior' to attack ships in air-sea operations. In an area that runs from The Netherlands, Germany to Denmark many ground targets were situated, from real German SA-8 vehicles to inflatable SA-8 looking targets. Smoke-rockets and SAM's on the coastline of Germany and Denmark near the German Surface to Air installations. Also the Northsea is used for air-air and air-ground missiles in different settings. the German Detachment Commander (DetCo) Lt. Kolonel Karl Ohlemacher explains: Germany has stationed 150 persons personel at Leeuwarden Airbase for two weeks, we brought a mix of very- and less experienced pilots, the latter is a group that have not yet so much experience in this kind of large exercises. Germany now has 140 operational Typhoon Eurofighters in service, but just limited for the air-to-air defence role. Air-to-ground will probably become reality end of this year or beginning 2015. For that reason we Germans only act as airdefence in this edition FF14. One day in the role of the 'Red-air' and the other as 'Blue-air'. The question if Germany has certain cooperations like the EPAF-countries (European Participation Air Forces) do have with the F-16 showed up a deep sigh by Ohlemacher. 'We try to have this with

England, Spain, Italy and Saudi-Arabia but the way the F-16 community has strong bonds, we cannot just create this in the Eurofighter community yet. We do exchange a lot of information during exercises, spare-parts and other means but I'm afraid it's going to take years before we have the same as the F-16 group'.

PARTICIPANTS VIEW

The Danish Airforce, led by Major Morton (DetCo) Hassø has a detachment of 53 people, including eightpilots at Leeuwarden. For Denmark the same reasons, which are also echoed by the Portugese DetCo colleague Jose Rosa. 'FF14 offers many opportunities for us to train. Therefor we have taken a mix of expererenced and less experienced pilots and staff to train and learn in different levels. Those who are 'Combat Ready' and those who will be in a while. Frisian Flag is a great, well organized and professional practice, and we are happy to be part of it as EPAF partner. The possibilities are enormous and also very beneficial. Logistics is a big reason that we want to do in here, besides the aspects of training course'. The coming years Portugal will train Romanian pilots for the F-16s that they will be taking over. Portugal will provide Romania with in total 12 F-16's together with an option as armament, spare-parts and equipment. About 30 of the newer F-16 types will remain in Portugal in service for some years since there is not yet a successor and the finances for that are not yet sufficient.

For Spain it's their first time they participate with six of the new Eurofighter-2000 Typhoon in FF14. The Spanish 'landed' with 75 men and women and 13 pilots on the 'Friesland' base. Preparations were started already in december 2013. 'Why this exercise ? Because there is no other exercise in Europe like Frisian Flag. This very good exercise is well suited to practice our offensive task as a swing-role and air-to-air actions and to cooperate with other nations' as stated by DetCo major Daniel Leal, Commander of the 111 Squadron. On daily base we are refuelled by the German A-310 and we exchange information about our airplanes. Our objective is to gain experience and collaboration with other colleagues and types of fighter aircraft. During CAS-missions (Close Air Support) even our Eurofighters are used for target-marking for the F-16's, in combination with combat-troops on the ground. We hope for good results in our practicing so we'll learn a lot which can result in our participation in following editions'. Southern Europe also found the most Northern province of 'Friesland' in The Netherlands which is a promise for the future and perhaps an extension of the exercise. Europe and Friesland are ready for this future.

EDA, EATC, EART AND FRISIAN FLAG 2014

This year the EDA together with the EATC (European Air Transport Command) found a unique combination in merging the first EART (European Air-to-Air Refuelling Training) held at Eindhoven Airbase in The Netherlands with the large annual international fightertraining 'Frisian Flag 2014' (FF14). FF14 comprises pilots practice flights for both air defense and attacking ground targets, missions in international context, and getting pilots to a higher level in performing these complexe missions in a red against blue forces scenario. This fits seamless in the AAR exercise, giving scenarios of future NATO Response Force (NRF) commitment and current efforts such as in Afghanistan and recently over Libya central. 'Unified Protector' was the NATO codename for maintaining the no-flyzone over Libia, an absolute necessity to keep the airspace clean from Ghadaffi's fighterjets. Condition to achieve this was the need of AAR (air-to-air refuelling) over the area. But tanker crews and tanker planners found out that this fact gave scenario's they were not exposed to during the regular peacetime aerial refuelling operations over own territory. The primary EDA aim of EART therefor is to get all participants proficient in their qualifications with their dedicated assets and to improve multinational cooperation for AAR in Europe.

EINDHOVEN AIRBASE AS HUB

Support aircraft for FF14 in this connection comprise the upgraded Hercules C-130, Italy brings its KC-767A (Boom/Drogue) tanker and Germany acts with the (Drogue) A-310MRTT and ofcourse the line is closed by the Dutch KDC-10 (Boom) tanker/transportplane. The tankers fly from Eindhoven Airbase and act similar with FF14 exercise EART (European Air-to-Air Refuelling Training. These aircraft more or less operate next to the 'Fighter-zone' , that is only to provide them with fuel, but being as far as possible from the real ('dangerous') action because tankers are very fragile with no tools for self-defense. Therefor guarding the tankers can also be an objective for fighters. One fighter in a battle is of lower value than the high-value tanker. Finally we meet 'on air' the French Airforce with their Awacs E-3F flying from

homebase Avord and an AWACS E-3A Sentry unit is flying along as well in the exercise which starts from the own homebase Geilenkirchen Germany. Acting from Eindhoven airbase brings the advantage that aircraft can act direct from- and in the central scenario which was designed in a Quick Response situation.

LOOSING THE TANKER IS LOOSING THE MISSION

It appeared that the different individual logistic and alignment exercises didn't completely fit into each other which necessitated to build up knowledge of the different characteristics of used European tankers (systems) in general, to avoid a possible military alignment, practical as well as technical. So in march 2012 the Ministries of Defense stated that AAR capability procedures should be developed in Europe as a matter of high priority and therefor the European Defence Agency (EDA) developed procedures to alleviate this shortfall. EDA developed a programme on Air-to-Air Refuelling based on four pillars: Short term gap filling, optimisation of existing assets & organisations, increase of A400M AAR kits and strategic tanker capability. Standardization is needed to be done, you cannot afford a fighter going home because the tankersystem does not fit. In short and very understandable: In a wartime scenario loosing the tanker is loosing the mission ! The FF14 area is approximately about 74.000 square kilometers. The FF14 missions are flown over Dutch, German and Danish airspace, divided into two area's, Red and Blue. The Red's area (East, what a coincident) was called SHELL, and the Blue area was called ESSO. (Humor can be). The complex combination of EART and FF14 brings together: Plan, brief, execute and debrief, Multinational Tanker Training and Tanker Operations in large-scale COMAO packages in a realistic scenario.

Also Practice multinational mixed fighter operations in different roles against a realistic airborne and ground based threat. Nice detail is that the tanker crews had to deal with sometimes aircraft changing from red to blue and vice-versa to train both aircrew and logistics in quick turnaround execution. Finally the last objective is to establish multinational relationships between NATO and Non-NATO Partnership-For-Peace (PFP) Airforces. Spain and Italy are expected to join permanently, and a future objective is harmonizing and developing procedures and related processes to efficiently and effectively employ existing and future platforms in their dual AAR and AT role, implicating establishing of European AAR planners courses. The AAR capable A400M fleet should be optimized, EDA proposes that non-A400 operators aquire (buy or lease) A400M AAR kits for use on fielded platforms when contingency planning asks for it to satisfy EU and NATO targets. This way the total image of different fughtertypes and different tankerplanes can be adjusted to make it a well-trained universal platform in which 'Pooling and Sharing' also can be realized between the different European countries.

UNKNOWN OCCUPATION: BOOM OPERATOR

The boom operator, also called Boomer, is the linchpin in the refueling of F-16s with the KDC-10 tanker aircraft in the air. A very responsible job, but how do you become a Boomer, how many are there in The Netherlands due to the very large and combined exercises and what do they do exactly? Louis Martin, one of only 10 in the Netherlands, tells his story. If you operate the boom, or in fact as they call it 'fly' the boom, you manage the fuel-tube of the tanker aircraft (for instance KDC-10, Eindhoven Air Base). This tube connects the KDC-10 with the fighters so they can be provided with fuel in only seconds. In addition, you are a loadmaster, so a two-in-one professional. It is not a 'jeans' appeal, meaning that as a citizen you can not enroll in this profession. Louis first worked for 10 years in the Royal Air Force as avionics specialist. Suddenly he knew: "I want to be Boomer," as he had observed that work so often. One second, that brings a lot of questions at the same time. Can I do it ? Do I have the right level ? Can I keep up to the demanded requirements? Can I handle the stress ? Will I be able to complete the training?

THIS WAY YOU BECOME A BOOMER

The selection requires at least five years of experience as a technician on the KDC-10. Also five years of experience as a load-controller of the RNLAFCargo, or loadmaster on another type of aircraft is required. Psychological testing at the Center for Man and Aviation in Soesterberg (CML), a fly-medical examination and eye-hand coordination tests are part of the inspection Louis explains. After that five months of training will follow (USA), the first six weeks implicate a basic training at Lackland base. Much theory and calculations, the translation of cargo from 'freight' to place and space in the aircraft, and as

many information about the actual refuelling of planes air to air. Only then the specific training will start at McGuire on the type of aircraft on which you will perform your job. Slightly by that time with the training on the simulator your new job is getting a little bit of the real image of this fine occupation. An instructor will guide you up to the time that the trick has 'landed' in your fingertips, even during the first real flights the instructor will be on your side if help is needed. In the Netherlands, you will learn to fly the boom using using 3D (three dimensional) screens simultaneously and thereby communicate with the cockpit and the "receiver" (the receiving unit) at the same time, a special technique.

THE FLIGHT

In a pre-briefing for the entire crew are all the information and aspects are discussed in detail by function, as well as departure time, destination and expectations as the weather. Also, the number of participating F-16s, how much fuel will be delivered, and at long distance flights the work & rest schedule. An example: To fly from Eindhoven Airbase to Goose Bay in Canada with six receivers and 30,000 pounds of cargo is feasible. After the briefing and under responsibility of the Boomer a so called pre-inspection takes place in the RARO station (Remote Air Refuelling Station Operating). A pre-flight and boom-check to make sure all equipment is working properly. Then Safety Checks follow (oxygen masks, extinguishing), catering, passenger and cargo, the (dis) arms of the doors and evacuation items, it all runs under the responsibility of the Boomer. Any small deviation inside or outside the plane does mean an absolute no flying yet ! The so-called Weight & Balance sheet is being prepared in cooperation with the flight-engineer. With these data he further calculates its take-off performance. At this point the pilots will arrive and last and final flight briefing follows. At the take-off the Boomer is sitting on 'seat 4' behind the pilot for a monitoring function on electronics, hydraulics, air conditioning, etc. where a backup exists for all elementary systems. After take off at 10,000 feet again a visual check follows by the Boomer as called "completely through the aircraft", regardless whether there are passengers and cargo or not. The whole is peppered with precautions, sometimes a refueling can not continue because of turbulence, but then a short break or another flightlevel can bring the solution.

ACTUALLY REFUELLING WITH THE RARO STATION

RARO stands for Remote Air Refuelling Operator Station, the Boomers workplace. Differences between the KC-10A (USAF) and the KDC-10 (NL) are that the KC-10A has no windows and has more fuel capacity, basically said a flying fueltank. The KDC-10, however, has a passenger section, a cargo section and four fuel tanks (total 265,000 pounds) situated under the cargo section. The USAF's Boomer is situated in the back (tail) of the plane and has sight through a window (he has a direct view of the action) and the KDC-10 is working with five monitors in the front of the plane where the Boomer features stereoscopic 3-D glasses to see a good depth for an accurate picture. The screens allow the Boomer to see under the belly of the fuselage of the KDC-10 and have a faraway view as well as the leftwing and rightwing side of the tanker. The F-16's approach and take position behind the left wing, guiding them to the so-called 'astern' position, the (hover) 'stabilized and ready' position using light signals and / or radio contact between the Boomer and F-16, the "receiver". By deployment in crisis areas, the F-16's only are coached correctly through light signals under the fuselage of the KDC-10 to avoid any radio contact which could be received by the enemy which could give them information that- and where you are there. The boom consists of a set of eight meters steady and a pull-out part of seven meters, which then has been extended already by the Boomer. He has two 'joysticks', a left telescoping stick for the extension of the boom, and a right flight control stick to 'fly' the boom around the cockpit of the F-16 where the boom is brought in position this way for the connection to the (terminal) receptacle.

BREAKAWAY !!

Louis tells us he didn't get into any weird situations himself in all these years and shows himself to be very experienced during the interview. Despite all the security measures a sudden unwanted situation can arise through all the 'Safety First' regulations. You can never exclude this. The Boomer is 'always in charge' and if really an aberrant situation would arise how ever minor, the Boomer will shout instantly " *breakaway - breakaway - breakaway* ", and the Boomer immediately disengages, the Captain of the KDC-10 immediately increases speed, and the receiving F-16 directly decreases the speed and thus falls back behind the tanker. Such a "situation" could be that after (or within) three attempts did not succeed while turbulence also disrupts the party. The F-16 takes distance, and that is also why the to be refueled F-16's fly left of the tanker, and the already refueled planes fly right of the tanker. In general however this is very unlikely to happen because all factors are looked at and judged before and during the actual moment of refuelling. Also a total fuel dump is possible if ever a precautionary landing is to be made. In such a case and at this altitude the fuel will not be of any danger for the ground because

kerosene never touches the ground, it evaporates before it can hit the ground. By the way aircraft only discharge kerosene in absolute emergency situations. This fuel is much too precious to waste.

On the final question whether Louis wants to add something, a surprising answer follows. "After all these years in the morning I step in my car and I still think: What a wonderful profession I do have !"

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